

Crustacea Decapoda : *Chirostylus* Ortmann, 1892, and *Gastroptychus* Caullery, 1896 (Chirostylidae) from New Caledonia

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ABSTRACT

Five species of chirostylid crustaceans belonging to the genera *Chirostylus* and *Gastroptychus* are reported from New Caledonia : *Chirostylus novaecaledoniae* sp. nov., *Gastroptychus breviproodus* sp. nov., and *G. paucispina* sp. nov., are described and illustrated; *G. hendersoni* (Alcock & Anderson, 1899) and *G. sternoornatus* (Van Dam, 1933) are recorded for the first time from New Caledonia.

RÉSUMÉ

Crustacea Decapoda : Les espèces des genres *Chirostylus* Ortmann, 1892, et *Gastroptychus* Caullery, 1896 (Chirostylidae) en Nouvelle-Calédonie.

Cinq espèces de crustacés Chirostylides, appartenant aux genres *Chirostylus* et *Gastroptychus*, sont signalées de Nouvelle-Calédonie. *Chirostylus novaecaledoniae* sp. nov. se distingue de *C. dolichopus* Ortmann, 1892, et *C. ortmanni* Miyake & Baba, 1968, par la disposition des épines de la carapace. *Gastroptychus breviproodus* sp. nov. présente, comme *G. novaezelandiae* Baba, 1974, des périoïpodes dont les propodes, courts, sont caractéristiques, mais se distingue aisément par les somites abdominaux lisses. *Gastroptychus paucispina* sp. nov. est proche de *G. laevis* (Henderson, 1885); il s'en distingue par ses pédoncules oculaires plus forts et la disposition des épines de la carapace. *Gastroptychus hendersoni* (Alcock & Anderson, 1899) et *G. sternoornatus* (Van Dam, 1933) sont signalés pour la première fois en Nouvelle-Calédonie.

INTRODUCTION

Recent collections have been made from New Caledonia and nearby by the Institut français de Recherche scientifique pour le Développement en Coopération (ORSTOM) under several projects (BIOCAL, BIOGEOCAL,

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CALSUB, CHALCAL, CORAIL, SMIB, VOLSMAR, etc.), and by joint expeditions with the Muséum national d'Histoire naturelle, Paris (MUSORSTOM 4, 5, 6) (see RICHER DE FORGES, 1990). The specimens, now in the collection of the Muséum national d'Histoire naturelle, include considerable numbers of galatheidean crustaceans (Chirostylidae and Galatheididae) which have been placed at my disposal for study. The chirostylids are distributed among four genera: *Chirostylus* Ortmann, 1892, *Gastroptychus* Caullery, 1896, *Uroptychus* Henderson, 1888, and *Eumunida* Smith, 1883. The material of the last-mentioned genus was discussed recently by de SAINT LAURENT & MACPHERSON (1990). This paper, the first of a series, deals with *Chirostylus* and *Gastroptychus*.

The postorbital carapace lengths in mm are given under "Material examined." Colors are described from transparencies. The abbreviations for the repositories used are: MNHN, Muséum national d'Histoire naturelle, Paris; ITZA, Institute of the Taxonomic Zoology, University of Amsterdam.

SYSTEMATIC ACCOUNT

Genus *CHIROSTYLUS* Ortmann, 1892

Chirostylus novaecaledoniae sp. nov.

Figs 1, 8 a

MATERIAL EXAMINED. — **Loyalty Islands.** MUSORSTOM 6: stn CP 400, 20°42.18'S, 167°00.40'E, 270 m, 14 Feb. 1989: 1 ♂ 4.8 mm, holotype (MNHN-Ga 2069), 1 ♀ 2.7 mm (MNHN-Ga 2070). — Stn DW 473, 21°08.80'S, 167°55.30'E, 236 m, 22 Feb. 1989: 2 ♂ 3.4, 3.9 mm (MNHN-Ga 2071). — Stn DW 474, 21°08.80'S, 167°55.50'E, 260 m, 22 Feb. 1989: 2 ♂ 4.2, 5.4 mm, 1 ovig. ♀ 4.2 mm, 1 ♀ 3.1 mm (MNHN-Ga 2072).

Chesterfield Islands. MUSORSTOM 5: stn CP 287, 24°05.40'S, 159°36.30'E, 270 m, 10 Oct. 1986: 1 ♂ 4.8 mm (MNHN-Ga 2068).

TYPES. — The male (MNHN-Ga 2069) from Stn CP 400 (MUSORSTOM 6) is the holotype, and the other specimens are paratypes.

DESCRIPTION. — Carapace lacking rostrum, 1.18–1.30 (average 1.24) times longer than greatest width. Front margin convex with small spine in place of rostrum. Pair of prominent epigastric spines directly behind eyes, directed anterodorsally. Two distinct spines in midline flanking cervical groove, anterior spine situated on posterior gastric region but rarely absent (in only one paratype), posterior spine on anterior cardiac region. Posterior branchial region with row of 3 or 4 (rarely 5) spines parallel with lateral margin. Lateral margins diverging posteriorly to point one-quarter from posterior end, converging behind it with strong concavity. Anterolateral spine prominent, directed anterolaterally, preceded by smaller spine at lateral limit of orbit. Posterior margin strongly concave. Pterygostomial flap relatively narrow, with row of several spinules parallel to lateral margin of carapace, occasionally accompanied by a few spinules ventral to this row on posterior half, anteriorly ending in sharp spine.

Abdomen glabrous and unarmed, pleura of second, third and fourth abdominal somites sharply triangular, that of fifth somite ending in rounded margin; that of sixth somite wider than those of preceding somites, with lobe-like lateral margin. Telson divided into 2 lobes by indistinct fissure; anterior lobe with convex lateral margins 1.5 times as wide as posterior; posterior lobe 1.6–1.7 times longer than anterior, semielliptical.

Eye stalks elongate, somewhat depressed, with concave mesial margin, cornea somewhat dilated, about one-third length of remaining eyestalk.

Antennular basal segment with bifurcate distolateral spine. Antennal peduncle lacking acicle, ultimate segment with terminal spine ventromesially.

Ischium of third maxilliped with 18–21 denticles on mesial ridge; merus and carpus each with distolateral spine. Sternite at base of third maxilliped somewhat depressed from level of following sternite, with line of 6 spines on transverse anterior margin. Following sternite with distinct spine on proximal lateral margin.

Chelipeds subequal, slender, subcylindrical, 10.3–15.7 (average 14.1) times as long as carapace, very sparsely provided with long coarse setae. Palm (propodus) nearly as long as or slightly longer than carpus, 2.4–5.5 (average 3.5) times longer than finger; bearing 6 rows of spines (2 dorsal, 2 ventral, 1 mesial, 1 lateral) continued onto

carpus and merus. Fingers directed somewhat laterally; opposable margins gaping on proximal two-thirds, closely fitting each other with tubercles on distal one-third; gaping portions with somewhat larger tubercles and pronounced processes as illustrated (Fig. 1 c-d).

First walking leg very slender, fully reaching (rarely slightly overreaching) end of cheliped carpus. Merus as long as carpus and propodus combined, with 2 rows of spines along dorsal margin, ventrolateral and ventromesial margins each with line of spines. Carpus with numerous dorsal spinules rather closely set proximally, ventrally with a few sparse spinules. Propodus distinctly longer, but slightly narrower than carpus in lateral view; dorsally with row of fixed spinules, ventrally with movable ones; latter larger and closely set distally. Dactylus one-seventh to one-sixth as long as propodus, feebly curving, with 8 or 9 ventral spines (including terminal) gradually decreasing in size toward base of segment, distal 2 somewhat more pronounced than remainder.

COLOR. — Male holotype from Sin CP 400 (MUSORSTOM 6) (Fig. 8 a). Body light carrot-orange, with scattered white spots laterally (on lateral sides of carapace and abdominal tergites). Carapace with white spotted line

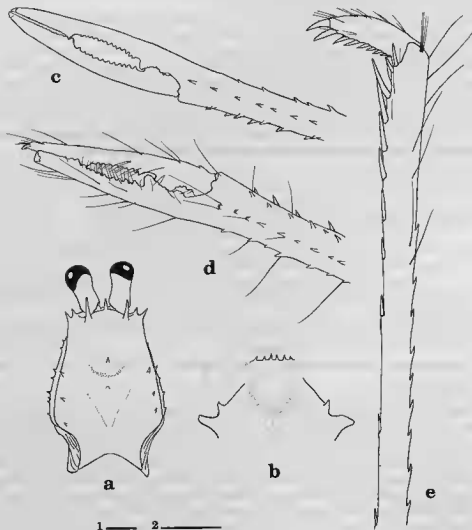


FIG. 1. — *Chirostylus novaecaledoniae* sp. nov., ♂ holotype from Sin CP 400 (MUSORSTOM 6): a, carapace, dorsal view; b, anterior part of sternum; c, right cheliped, distal part, setae omitted, dorsal view; d, left cheliped, distal part, dorsal view; e, distal segments of left first walking leg, lateral view. Scales = 1 mm; scale 1 for a, c, d; scale 2 for b, e.

in large triangle. Eyestalks light reddish purple, cornea intensely black. Appendages light carrot-orange in background color, tinged with blue, with chromatophores of carrot-orange; distal parts of meri of pereopods intensely carrot-orange.

ETYMOLOGY. — The specific name suggests the type-locality of the species.

REMARKS. — Three species of *Chirostylus* are known only from the Indo-West Pacific: *C. dolichopus* Ortmann, 1892, from Japan (type-locality: Sagami Bay), Sulu Archipelago, Western Australia, east coast of Somali Republic and Mozambique Channel in 35–140 m (ORTMANN, 1892; MIYAKE & BABA, 1968; HAIG, 1974; TIRMIZI & KHAN, 1979; MIYAKE, 1982; BABA, 1988); *C. micheleae* Tirmizi & Khan, 1979, from east coast of Somali Republic (type-locality) and Mozambique Channel in 75–140 m; *C. ortmanni* Miyake & Baba, 1968, from north coast of Kyushu, Japan (type-locality) in 90 m.

Chirostylus micheleae is very different from the other two and from the new species in the very spinose carapace, appendages, and even the posterior parts of the abdomen. The triangular lining of white or light color on the carapace as displayed by the new species is also characteristic of *C. dolichopus* and *C. ortmanni* (see MIYAKE, 1982: pl. 48, fig. 1; MIYAKE & BABA, 1968: 385).

The arrangement of spines on the carapace varies among the three less spinose species. Apart from the two anterior gastric spines, there is only a single spine near the end of the cervical groove in *C. dolichopus*, one posterior median gastric and one posterior branchial marginal spine at about midlength in *C. ortmanni*, and two spines on the midline (one on gastric, one on cardiac region) and a row of three spines along and slightly dorsal to the anterior half of the posterior branchial margin in *C. novaecaledoniae*. The sizes of the dactylar ventral spines of the walking legs in *C. novaecaledoniae* are very much like those of *C. ortmanni* (the ultimate spine is nearly as large as the penultimate as in *C. ortmanni*), but the spines are closer to each other. The fourth thoracic sternite in *C. novaecaledoniae* bears a distinct lateral spine which is absent in the previously known species.

The smaller male from Stn DW 474 bears an externa of a rhizocephalan parasite.

Genus *GASTROPTYCHUS* Caullery, 1896

Gastroptychus breviproodus sp. nov.

Figs 2-3

MATERIAL EXAMINED. — **Loyalty Islands Basin.** BIOCAL: stn DW 08, 20°34'S, 166°54'E, 435 m, 12 Aug. 1985: 1 ♂ 4.6 mm (MNHN-Ga 2073). — Stn CP 109, 22°11'S, 167°16'E, 495–515 m, 9 Sept. 1985: 1 ovig. ♀ 7.7 mm, holotype (MNHN-Ga 2074).

Chesterfield Islands. MUSORSTOM 5: stn DW 355, 19°36.43'S, 158°43.41'E, 580 m, 18 Oct. 1986: 2 ♂ 4.9, 5.6 mm, 1 ovig. ♀ 5.6 mm, 1 ♀ 5.6 mm (MNHN-Ga 2075).

TYPES. — The ovigerous female (MNHN-Ga 2074) from Stn CP 109 (BIOCAL) is selected as the holotype. The other specimens are paratypes.

DESCRIPTION. — Rostrum 0.33–0.40 (average 0.36) times as long as postorbital carapace length, basal portion broad, rostral spine curving dorsally. Lateral limit of orbit unarmed but with small accompanying spine slightly lateral to it. Carapace, excluding rostrum, 1.18–1.31 (average 1.24) times as long as its greatest width. Dorsal surface with 7 prominent spines in addition to scattered small ones: 2 behind eyes strongest, 3 (1 posterior gastric, 1 anterior cardiac, 1 posterior cardiac) in midline, and 2 directly anterior to posterior margin. Gastric region moderately convex, distinct from cardiac region by deep cervical groove slightly anterior to midpoint of postorbital carapace length, but indistinct from branchial and hepatic regions. Lateral margins diverging posteriorly to point two-thirds from anterior end, then converging behind it with shallow concavity, anterolateral spine distinct, accompanying 2 larger spines arising from anterior branchial region. No elevated ridge along posterior margin. Pterygostomian flap relatively narrow, with small spines as figured (Fig. 2 b), anterior margin rounded, without spine.

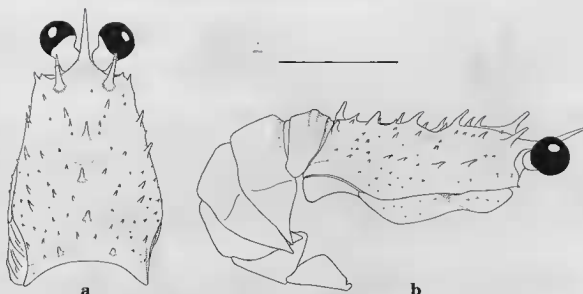


FIG. 2. — *Gastroptychus breviproodus* sp. nov., ovig. ♀ holotype from Strn CP 109 (BIOCAL): a, carapace, dorsal view; b, carapace and abdomen, lateral view. Scale = 5 mm.

Eyestalks usually overreaching rostral tip, cornea strongly dilated.

Abdominal somites glabrous and unarmed, pleura of second, third and fourth somites sharply tapering.

Basal segment of antennule with 2 or 3 spines on distomesial process. Antennal peduncle having second segment with 1 or 2 small spines on distolateral margin, distal 2 segments with sharp distoventral spine, ultimate segment more than twice as long as penultimate, antennal acicle absent.

Endopod of third maxilliped relatively slender, merus and carpus each with distolateral spine; ischium with 18–23 denticles on mesal ridge.

Sternite at base of third maxilliped with sinuous anterior margin bearing 4 or 6 spines. Following sternite with strong anteriorly directed spine on lateral margin, rarely with accompanying small spine lateral to it at base, occasionally with pair of spines on surface somewhat posterior and mesial to lateral spines.

Chelipeds subcylindrical, 9–10 times as long as carapace excluding rostrum, with sparse long coarse setae, bearing relatively large spines widely spaced and arranged in 5–6 rows; carpus 1.1–1.6 times as long as palm; palm somewhat widened distally, 9.3–14.7 times as long as wide, 2.2–2.7 times as long as movable finger, with additional row of dorsal spines on proximal half of length. Fingers moderately gaping on proximal three-fifths, touching each other on distal two-fifths, distally crossing; opposable margins with line of tubercles and large proximal process.

Walking legs slender, distally compressed, spinose, with sparse coarse setae. First walking leg reaching end of carpus of cheliped; merus slightly longer than carpus, with 6 rows of spines; carpus more slender than merus, 7–8 times longer than propodus, with numerous inclined elongate spines on dorsal margin, 18–21 on whole length of ventromesial margin, less numerous ones on distal two-thirds of ventrolateral margin, and several on distal portion of dorsolateral surface; propodus much wider and more setose dorsally than carpus, ventrally with 7–9 movable slender spines; very short relative to carpus but distinctly more than twice as long as dactylus, exclusive of spines; dactylus short, convex dorsally, nearly straight ventrally, with 7 basally articulated spines, ultimate one very small and slender, penultimate one strongest, curving, claw-like, nearly contiguous with preceding one, remainder smaller, diminishing in size proximally. Following 2 walking legs similar, but third leg somewhat shorter.

ETYMOLOGY. — The combination of *brevis* (Latin = short) and *propodus* refers to the short propodus of each of the walking legs which is a distinguishing character of this species.

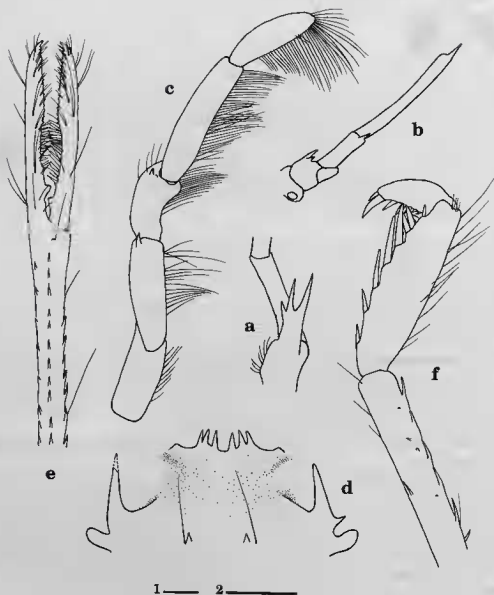


FIG. 3. — *Gastroptychus breviproodus* sp. nov., ovig. ♀ holotype from Stn CP 109 (BIICAL): a, basal segment of left antennule, lateral view; b, right antennal peduncle, ventral view; c, endopod of right third maxilliped, lateral view; d, anterior part of sternum; e, distal part of left cheliped, dorsal view; f, distal segments of left third walking leg, mesial view. Scales = 1 mm; scale 1 for e; scale 2 for a-d.

REMARKS. — The combination of very short propodi of the walking legs and a row of spines on the anterior margin of the third thoracic sternite at the bases of the third maxillipeds links the species very strongly to *Gastroptychus novaezelandiae* Baba, 1974, from the Chatham Rise off the east coast of South Island, New Zealand. The latter is characterized most obviously by very spinose abdominal somites, the third maxilliped bearing extra spines on the merus, carpus and propodus, and the thoracic sternum bearing numerous small spines behind the level of the strong lateral spines on the fourth thoracic sternite. *Gastroptychus sternoornatus* Van Dam, 1933, also has smooth abdominal somites, but the walking legs of that species have longer propodi and dactyli with fewer ventral spines, the ultimate such spine being strongest and remote from the penultimate.

Gastroptychus hendersoni (Alcock & Anderson, 1899)

Ptychogaster hendersoni Alcock & Anderson, 1899 : 23.

Gastroptychus hendersoni - BABA, 1988 : 14 (synonymy and references).

MATERIAL EXAMINED. — Loyalty Islands Basin. BIOCAL : Stn CP 232, 21°33.81'S, 166°27.07'E, 760–790 m, 12 Apr. 1987 : 1 ♂ 8.1 mm (MNHN-Ga 2076).

REMARKS. — Fewer spines on the carapace, and the presence of small spines at least on pleura of the third abdominal somite, separate this species from *Gastroptychus investigatoris* (Alcock & Anderson, 1899) (see BABA, 1988 : 14), ALCOCK (1901 : 280), in his key to the two species, stressed the differences in the relative lengths of the two telsonal lobes (the length of the anterior lobe is more than half that of the posterior lobe in *G. investigatoris*, whereas it is not in *G. hendersoni*). This relationship is not true for specimens from the Philippines and the Loyalty Islands, where the ratio is greater than one-half in both species. The anterior-posterior lobe length ratios are 0.82–0.88 in *G. investigatoris* from the Philippines, 0.68 in *G. hendersoni* from the Philippines, and 0.65 in the present specimen. It may be concluded that the ratio is greater in *G. investigatoris* than in *G. hendersoni*.

RANGE. — Previously known from the Arabian Sea off the west coast of India and off the South Arabian coast, the Philippines off northeastern Sulawesi, and the Kyushu-Palau Ridge, in 787–1469 m. The geographical range is now extended east to New Caledonia.

Gastroptychus paucispina sp. nov.

Figs 4–6, 8 b

MATERIAL EXAMINED. — Chesterfield Islands. MUSORSTOM 5 : stn DW 305, 22°09.27'S, 159°24.42'E, 430–440 m, 12 Oct. 1986 : 1 ♂ 6.3 mm (MNHN-Ga 2078).

New Caledonia. MUSORSTOM 4 : stn CP 215, 22°55.7'S, 167°17.0'E, 485–520 m, 28 Sept. 1985 : 1 ovig. ♀ 6.1 mm (MNHN-Ga 2077).

BIOCAL : stn DW 44, 22°47'S, 167°14'E, 440–450 m, 30 Aug. 1985 : 1 ♀ 4.8 mm (MNHN-Ga 2080). — Stn CP 45, 22°47'S, 167°15'E, 430–465 m, 30 Aug. 1985 : 1 ♂ 6.1 mm, 1 ovig. ♀ 5.7 mm (MNHN-Ga 2081).

Loyalty Islands. MUSORSTOM 6 : stn CP 464, 21°02.30'S, 167°31.60'E, 430 m, 21 Feb. 1989 : 1 ♂ 7.0 mm (MNHN-Ga 2079).

TYPES. — The male (MNHN-Ga 2078) from Stn DW 305 (MUSORSTOM 5) is selected as the holotype, the remaining specimens are paratypes.

DESCRIPTION. — Rostrum nearly one-third (0.27–0.38) as long as postorbital carapace length, basally wide, rostral spine slightly or moderately upcurved. Lateral limit of orbit rounded, accompanying small spine directly lateral to it. Carapace, excluding rostrum, 1.32–1.46 (average, 1.40) times as long as its greatest width; laterally weakly ridged, but more distinctly so on posterior portion. Lateral margins diverging posteriorly to point one-third from posterior end, then converging behind it; bearing 3–6 spines (excluding one lateral to lateral limit of orbit) slightly dorsal in position, posteriorly in particular, anterior 3 larger. Gastric region somewhat convex, bordered by depression from cardiac and branchial regions, with 2 prominent spines behind eyestalks and 2 somewhat smaller ones in midline (1 on posterior gastric and 1 on cardiac region), occasionally with a few small spines behind anterior gastric pair and between posterior gastric and cervical spines. No distinct elevation along posterior margin. Pterygostomian flap narrow, anteriorly ending in rounded margin, bearing 2 spines on anterior portion directly below linea anomurica.

Eyestalks well developed, reaching or slightly overreaching end of rostrum, cornea dilated, remaining eyestalk with distinct mesial marginal concavity.

Abdominal somites unarmed and smooth. Pleura of second and third somites sharply tapering, those of next two somites weakly so.

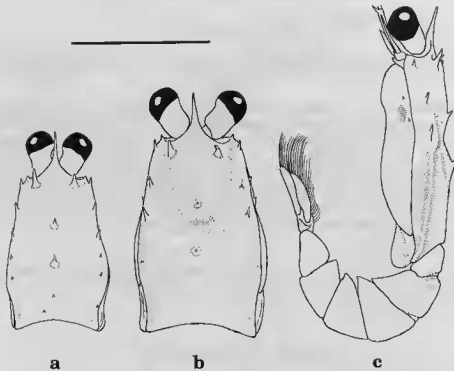


FIG. 4. — *Gastroptychus paucispina* sp. nov. : a, ♀ paratype from Sin DW 44 (BIOTAL), carapace, dorsal view; b-c, ♂ holotype from Sin DW 305 (MUSORSTOM 5) : b, carapace, dorsal view; c, carapace and abdomen, lateral view. Scale = 5 mm.

Antennular basal segment with 2 distomesial spines. Antennal peduncle slightly overreaching end of cornea, fifth (last) segment about twice as long as fourth, with distoventral spine; fourth segment unarmed, second segment with or without distolateral spine; antennal acicle terminating in, or overreaching, midlength of fifth segment.

Endopod of third maxilliped slender; ischium with 16–18 denticles on mesial ridge; merus and carpus each with distolateral spine; propodus about twice as long as dactylus.

Sternite at base of third maxilliped somewhat depressed from level of following sternite, moderately concave on anterior margin with 4–6 small spines flanking median rounded excavation; following sternite with strong curved spine on either side.

Chelipeds nearly 9 times as long as postorbital carapace length, subcylindrical (palm somewhat depressed), with sparse long setae. Coxa with prominent ventral spine. Merus distinctly less than twice length of palm, with 1–3 dorsal, 1 or 2 ventral, and mesial and lateral rows of spines continuing onto carpus and palm, spines on mesial row more pronounced. Carpus subequal to, or slightly shorter and somewhat narrower than, palm. Palm 2.5–3.6 times as long as movable finger, 9.3–15.7 times as long as wide, spination varying individually, from very dense to rather widely spaced (see Fig. 6). Fingers without spines usually gaping, distally crossing with acute medially directed spines, cutting edge of movable finger with proximal process opposite to space between 2 processes on fixed finger.

Walking legs slender, posteriorly shorter, with sparse long setae; first walking leg fully or barely reaching end of carpus of cheliped. Merus usually with 3 rows of spines: dorsal, dorsomesial, ventral; occasionally with another row of a few spines on lateral face; length about twice that of propodus. Carpus slightly longer than propodus on first walking leg, subequal to those on second and third legs, with 2 rows of dorsal spines and few ventral spines including well-developed terminal one. Propodus about 5 times as long as dactylus (spines excluded) on first walking leg, barely so on second and third legs; distally somewhat widened dorsoventrally (ventral margin

convex distally); dorsal margin with 14–18 movable slender spines along proximal two-thirds of length on first leg, 11–13 on second and third legs; ventral margin with 15–18 spines (excluding distomesial one barely visible from lateral view) along entire length on first leg, 9–16 along distal two-thirds of length on second and third legs. Dactylus curving ventrally, with 7, 8 or 9 (usually 8) ventral spines diminishing in size toward base of segment, ultimate (terminal) one prominent, distinctly remote from penultimate one.

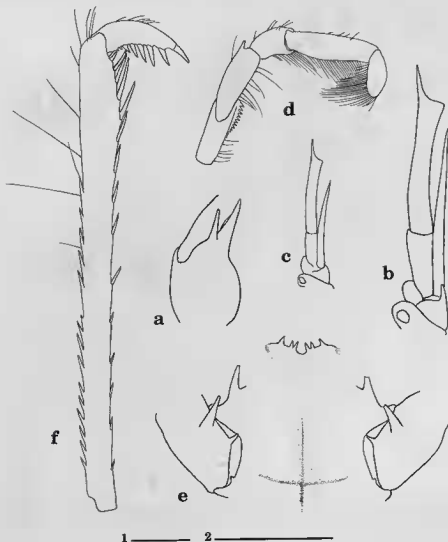


FIG. 5. — *Gastroptychus paucispina* sp. nov.: a-b, d-f, ♂ holotype from Sin DW 305 (MUSORSTOM 5); c, ♂ paratype from Sin CP 464 (MUSORSTOM 6): a, basal segment of left antennule, ventral view; b, left antennal peduncle, ventral view; c, same; d, endopod of right third maxilliped, lateral view; e, anterior part of sternum; f, distal segments of right first walking leg, lateral view. Scale = 1 mm; scale 1 for c-f; scale 2 for a, b.

COLOR. — Male paratype from Sin CP 464 (MUSORSTOM 6) (Fig. 5 b). Body light pink in background color, with orange digestive tract visible; anterior gastric portion with reddish marks, posterior branchial regions (hepatopancreas) orange-yellow. Abdominal tergites posterolaterally pink-orange, pleura transparent. Pereopods light pink with orange chromatophores, walking legs somewhat transparent. Eyestalks tinged with blue, with red chromatophores, cornea dark blue.



FIG. 6. — Chelae in dorsal view of *Gastroptychus paucispina* sp. nov.: a, ♂ holotype from Stn DW 305 (MUSORSTOM 5), left; b, same, right; c, ♂ paratype from Stn CP 464 (MUSORSTOM 6), left; d, same, right; e, ♀ paratype from Stn DW 44 (BIOCAL), right. Scale = 1 mm.

ETYMOLOGY. — The specific name is a noun in apposition from the Latin *paucus* (few) and *spina* (spine), alluding to the relatively few spines on the carapace.

REMARKS. — The less spinose carapace links the species to *Gastroptychus laevis* (Henderson, 1885) known from the ovigerous female holotype taken at "Challenger" Station 192 off the Kei Islands. The arrangement of the spines on the carapace, however, is not exactly the same. *Gastroptychus laevis* bears two smaller spines directly behind and mesial to the two prominent anterior gastric spines, a postcervical spine on either side, and a mid-posterior gastric spine, plus five slender marginal spines. In addition, *G. laevis* has unusually slender eyestalks and the propodi of the walking legs bear two or three ventral spines distally and no dorsal spines.

Gastroptychus sternoornatus van Dam, 1933

Fig. 7

Chirostylus sternoornatus van Dam, 1933 : 15, figs 21-23.*Gastroptychus sternoornatus* - BABA, 1988 : 16.

MATERIAL EXAMINED. — Loyalty Islands. MUSORSTOM 6 : stn CP 465, 21°03.55'S, 167°32.25'E, 480 m, 21 Feb. 1989 : 1 ♂ 7.7 mm, 2 ovig. ♀ 8.7, 9.4 mm (MNHN-Ga 2267).

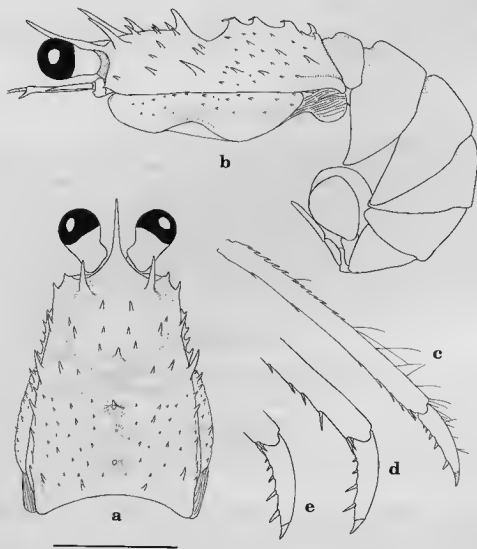


FIG. 7. — *Gastroptychus sternoornatus* (van Dam, 1933) : a-c, ovig. ♀ from Stn CP 465 (MUSORSTOM 6); d-e, ♀ holotype from "Siboga" Stn 254 (ITZA De. 101.664) : a, carapace, dorsal view; b, carapace and abdomen, lateral view; c, distal two segments of right first walking leg, lateral view; d, distal part of right first walking leg, lateral view; e, distal part of right second walking leg, lateral view. Scale = 5 mm.

REMARKS. — The identification was verified by examination of the holotype now deposited in the Institute of Taxonomic Zoology, University of Amsterdam (ITZA De.101.664).

The species is characterized by :

— the arrangement of prominent spines on the carapace (one on the mid-posterior gastric region, three on the midline of the cardiac region, and one on the posterior portion of the anterior branchial margin, in addition to the two anterior gastric spines (Fig. 7 a),

— the smooth, unarmed abdominal somites (Fig. 7 b),

— the armature of the dactyli of the walking legs (the ventral spines are relatively short and rather widely spaced, numbering mostly five, rarely four or six) (Fig. 7 c-e).

The specimens reported earlier from the Philippines (BABA, 1988 : 16) differ from these specimens and the holotype in the dactylus of the walking legs which bears more pronounced, more numerous and closely crowded spines (9 in number). Since there are no other characters to separate them they are retained in *G. sternornatus* until more material enables a proper evaluation of variation.

RANGE. — Previously known from the vicinity of Mindoro (Philippines) and off the Kei Islands, in 265–353 m. The present material constitutes a new locality record, extending the range east to New Caledonia.

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FIGURE 8

- a-b, *Chirostylus novaecaledoniae* sp. nov., ♂ holotype (c.l. 4.8 mm) from Stn CP 400 (MUSORSTOM 6);
c, *Gastroptychus paucispina* sp. nov., ♂ paratype (c.l. 7.0 mm) from Stn CP 464 (MUSORSTOM 6).



a



b



c